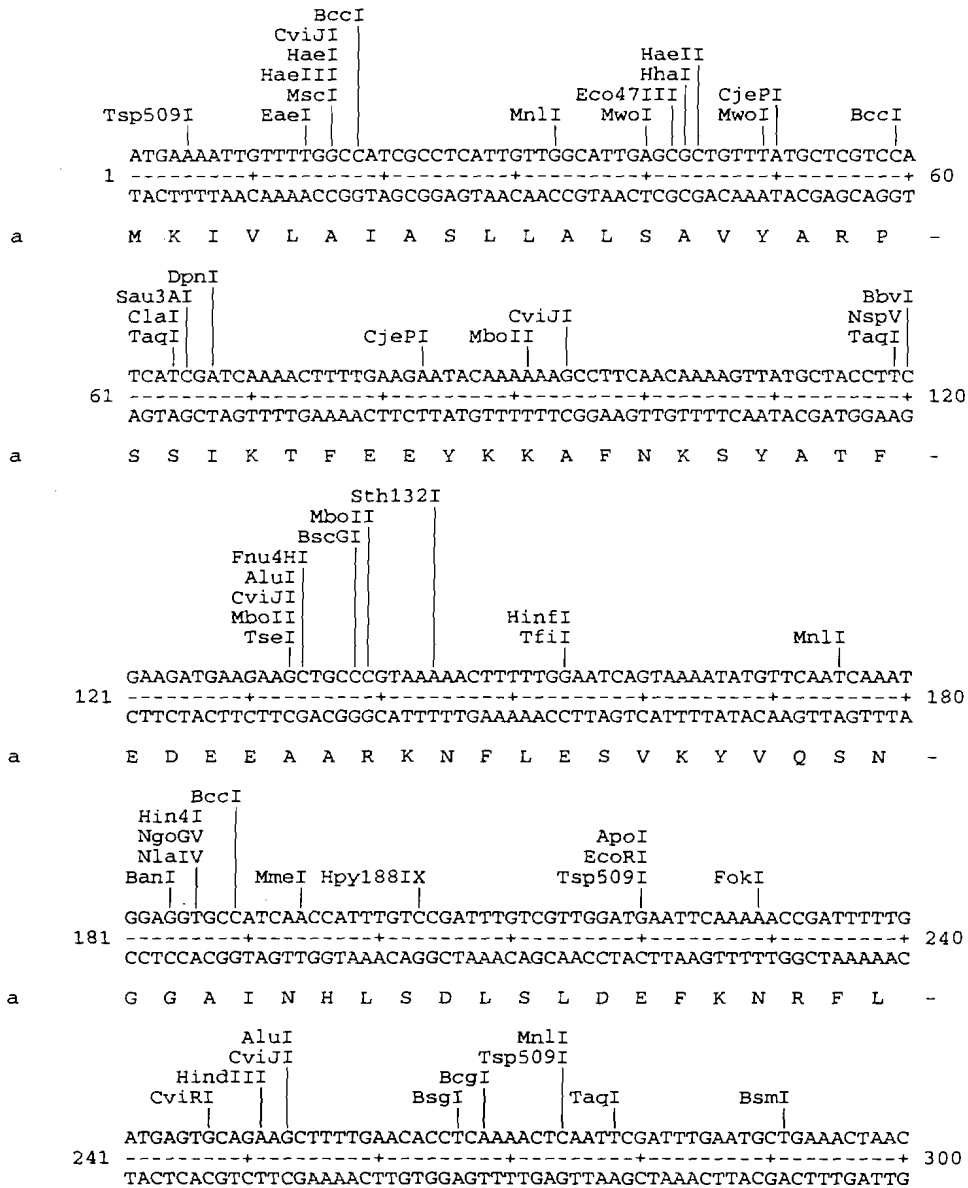


FIGURE 7: DerP1 restriction map of SEQ ID NO. 6.

(Linear) MAP of: Derp1.seq check: 7532 from: 1 to: 963

ID DP11695 standard; RNA; INV; 1099 BP.



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a M S A E A F E H L K T Q F D L N A E T N -

BpmI PstI BsaXI
CviRI
Cac8I SfcI BcgI CjePI AluI CviJI MspAII PvuII ClaI TaqI CjePI MwoI MaeIII TaaI Tsp45I

301 GCCTGCAGTATCAATGGAAATGCTCCAGCTGAAATCGATTTCGACAAATGCGAACTGTC 360
CGGACGTCATAGTTACCTTTACGAGGTCGACTTTAGCTAAACGCTGTTTACGCTTGACAG

a A C S I N G N A P A E I D L R Q M R T V -

CviRI MnlI MslI CviJI DrdII NlaIII CviJI BsbI Fnu4HI TauI

361 ACTCCCATTCGTATGCAAGGAGGCTGTGGTTTCATGTTGGGCTTCTCTGGTGTGTCGCA 420
TGAGGGTAAGCATACGTTCTCCGACACCAAGTACAACCCGAAAGAGACCACAACGGCGT

a T P I R M Q G G C G S C W A F S G V A A -

HinFI AluI CviJI MwoI TaaI DpnI BstYI Sau3AI AlwI Tsp509I

421 ACTGAATCAGCTTATTTGGCTTACCGTAATCAATCATTGGATCTTGCTGAACAAGAATTA 480
TGACTTAGTCGAATAAACCGAATGGCATTAGTTAGTAACCTAGAACGACTTGTTCTTAAT

a T E S A Y L A Y R N Q S L D L A E Q E L -

TaqI BsbI TaaI NlaIII CjeI HphI MaeII BsaAI FokI PmlI

481 GTCGATTGTGCTTCCCAACACGGTTGTCATGGTGATACCATTCACGTTGTTGAATAC 540
CAGCTAACACGAAGGGTTGTGCCAACAGTACCACTATGGTAAGGTGCACCATAACTTATG

a V D C A S Q H G C H G D T I P R G I E Y -

CjeI MslI BstXI AluI CviJI MneI MaeII ClaI BssSI CviRI

541 ATCCAACATAATGGTGTGCTCCAAGAAAGCTACTATCGATACGTTGCACGAGACAATCA 600
TAGGTTGTATTACCACAGCAGGTTCTTTCGATGATAGCTATGCAACGTGCTCTTGTTAGT

a I Q H N G V V Q E S Y Y R Y V A R E Q S -

NlaIII CviRI MaeII AclI ApoI Tsp509I CjeI

601 TGCCGACGACCAAAATGCACAACGTTTCGGTATCTCAAATATTGCCAAATTTACCCACCA 660
ACGGCTGCTGGTTTACGTGTTGCAAAGCCATAGAGTTTGATAACGGTTTAAATGGTGGT

a C R R P N A Q R F G I S N Y C Q I Y P P -

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AluI
CviJI
CjeI
HindIII
Hpy178III
ApoI
Tsp509I
CviJI
BceI
Eco47III
HaeII
HhaI
RleAI

661 AATGTAACAAATTCGTGAAGCTTTGGCTCAAACCCACAGCGCTATTGCCGTCATTATT 720
TTACATTTGTTTTAAGCACTTCGAAACCGAGTTTGGGTGTCGCGATAACGGCAGTAATAA

a N V N K I R E A L A Q T H S A I A V I I -

CviJI
HaeIII
BccI
EaeI
GdiII
SfaNI
BsmI
HgaI
MslI
ThaI

721 GGCATCAAAGATTAGACGCATTCCGTCATTATGATGGCCGAACAATCATCAACGCGAT 780
CCGTAGTTTCTAAATCTGCGTAAGGCAGTAATACTACCGCTTGTTAGTAAGTTGCGCTA

a G I K D L D A F R H Y D G R T I I Q R D -

BstEII
MaeIII
HincII
MaeIII
TaaI
DraIII

781 AATGGTTACCAACCAAACTATCACGCTGTCAACATTGTTGGTTACAGTAACGCACAAGGT 840
TTACCAATGGTTGGTTTGATAGTGCACAGTTGTAAACAACCAATGTCATTGCGTGTCCA

a N G Y Q P N Y H A V N I V G Y S N A Q G -

CjeI
TaaI
BciVI
CjePI
AlwI
RsaI
SunI
DpnI
Sau3AI
TaqI
HgiEII
MunI
Tsp509I
MaeIII
CjePI
HphI
BbvI
TaaI
CjeI

841 GTCGATTATTGGATCGTACGAAACAGTTGGGATACCAATTGGGGTGATAATGGTTACGGT 900
CAGCTAATAACCTAGCATGCTTTGTCAACCCTATGGTTAACCCCACTATTACCAATGCCA

a V D Y W I V R N S W D T N W G D N G Y G -

Fnu4HI
TseI
ClaI
TaqI
Bsp24I
CjePI
CjeI
MboII
NdeI

901 TATTTTGCTGCCAACATCGATTGATGATGATGAAGAATATCCATATGTTGTCATTCTC 960
ATAAACGACGGTTGTAGCTAACTACTACTTCTTATAGGTATACAACAGTAAGAG

a Y F A A N I D L M M I E E Y P Y V V I L -

TAA
961 --- 963
ATT

FIGURE 8: Sequence of full mutant DerP1 including pre-protein. Active site mutation Cys 132→Ala 132, corresponding to Cys34→Ala34 of the mature protein). Sequence includes coding (listed as SEQ ID NO. 6) and complementary DNA, and amino acid sequences (listed as SEQ ID NO. 1).

```
ATGAAAATTGTTTTGGCCATCGCCTCATTGTTGGCATTGAGCGCTGTTTATGCTCGTCCA 60
-----+-----+-----+-----+-----+-----+
TACTTTTAACAAAACCGGTAGCGGAGTAACAACCGTAACTCGCGACAAATACGAGCAGGT
M K I V L A I A S L L A L S A V Y A R P 20

TCATCGATCAAAACTTTTGAAGAATACAAAAAGCCTTCAACAAAAGTTATGCTACCTTC 120
-----+-----+-----+-----+-----+-----+
AGTAGCTAGTTTTGAAAACCTTCTTATGTTTTTTCGGAAGTTGTTTTCAATACGATGGAAG
S S I K T F E E Y K K A F N K S Y A T F 40

GAAGATGAAGAAGCTGCCCCGTA AAAACTTTTTGGAATCAGTAAAATATGTTCAATCAAAT 180
-----+-----+-----+-----+-----+-----+
CTTCTACTTCTTCGACGGGCATTTTTGAAAACCTTAGTCATTTTATACAAGTTAGTTTA
E D E E A A R K N F L E S V K Y V Q S N 60

GGAGGTGCCATCAACCATTGTCCGATTGTGCGTTGGATGAATTCAAAAACCGATTTTTTG 240
-----+-----+-----+-----+-----+-----+
CCTCCACGGTAGTTGGTAAACAGGCTAAACAGCAACCTACTTAAGTTTTTGGCTAAAAAC
G G A I N H L S D L S L D E F K N R F L 80

ATGAGTGCAGAAGCTTTTGAACACCTCAAAACTCAATTCGATTTGAATGCTGAAACTAAC 300
-----+-----+-----+-----+-----+-----+
TACTCACGTCTTCGAAAACCTGTGGAGTTTTGAGTTAAGCTAAACTTACGACTTTGATTG
M S A E A F E H L K T Q F D L N A E T N 100

GCCTGCAGTATCAATGGAAATGCTCCAGCTGAAATCGATTTGCGACAAATGCGAACTGTC 360
-----+-----+-----+-----+-----+-----+
CGGACGTCATAGTTACCTTTACGAGGTCGACTTTAGCTAAACGCTGTTTACGCTTGACAG
A C S I N G N A P A E I D L R Q M R T V 120

ACTCCCATTTCGTATGCAAGGAGGCTGTGGTTCAGCTTGGGCTTTCTCTGGTGTGCGCGCA 420
-----+-----+-----+-----+-----+-----+
TGAGGGTAAGCATACGTTCCCTCCGACACCAAGTCGAACCCGAAAGAGACCACAACGGCGT
T P I R M Q G G C G S A W A F S G V A A 140

ACTGAATCAGCTTATTTGGCTTACCGTAATCAATCATTGGATCTTGCTGAACAAGAATTA 480
-----+-----+-----+-----+-----+-----+
TGACTTAGTCGAATAAACCGAATGGCATTAGTTAGTAACCTAGAACGACTTGTTCTTAAT
T E S A Y L A Y R N Q S L D L A E Q E L 160
```

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GTCGATTGTGCTTCCCAACACGGTTGTCATGGTGATACCATTCACGTGGTATTGAATAC 540
-----+-----+-----+-----+-----+-----+
CAGCTAACACGAAGGGTTGTGCCAACAGTACCACTATGGTAAGGTGCACCATAACTTATG
V D C A S Q H G C H G D T I P R G I E Y 180

ATCCAACATAATGGTGTCTGCCAAGAAAGCTACTATCGATACGTTGCACGAGAACAAATCA 600
-----+-----+-----+-----+-----+-----+
TAGGTTGTATTACCACAGCAGGTTCTTTTCGATGATAGCTATGCAACGTGCTCTTGTTAGT
I Q H N G V V Q E S Y Y R Y V A R E Q S 200

TGCCGACGACCAAATGCACAACGTTTCGGTATCTCAAACCTATTGCCAAATTTACCCACCA 660
-----+-----+-----+-----+-----+-----+
ACGGCTGCTGGTTTACGTGTTGCAAAGCCATAGAGTTTGATAACGGTTTAAATGGGTGGT
C R R P N A Q R F G I S N Y C Q I Y P P 220

AATGTAAACAAAATTCGTGAAGCTTTGGCTCAAACCCACAGCGCTATTGCCGTCATTATT 720
-----+-----+-----+-----+-----+-----+
TTACATTTGTTTTAAGCACTTCGAAACCGAGTTTGGGTGTCGCGATAACGGCAGTAATAA
N V N K I R E A L A Q T H S A I A V I I 240

GGCATCAAAGATTTAGACGCATTCCGTCATTATGATGGCCGAACAATCATTCAACGCGAT 780
-----+-----+-----+-----+-----+-----+
CCGTAGTTTCTAAATCTGCGTAAGGCAGTAATACTACCGGCTTGTTAGTAAGTTGCGCTA
G I K D L D A F R H Y D G R T I I Q R D 260

AATGGTTACCAACCAAACCTATCACGCTGTCAACATTGTTGGTTACAGTAACGCACAAGGT 840
-----+-----+-----+-----+-----+-----+
TTACCAATGGTTGGTTTGATAGTGCGACAGTTGTAACAACCAATGTCATTGCGTGTTCCA
N G Y Q P N Y H A V N I V G Y S N A Q G 280

GTCGATTATTGGATCGTACGAAACAGTTGGGATACCAATTGGGGTGATAATGGTTACGGT 900
-----+-----+-----+-----+-----+-----+
CAGCTAATAACCTAGCATGCTTTGTCAACCCTATGGTTAACCCCACTATTACCAATGCCA
V D Y W I V R N S W D T N W G D N G Y G 300

TATTTTGCTGCCAACATCGATTTGATGATGATTGAAGAATATCCATATGTTGTCATTCTC 960
-----+-----+-----+-----+-----+-----+
ATAAAACGACGGTTGTAGCTAAACTACTACTAACTTCTTATAGGTATACAACAGTAAGAG
Y F A A N I D L M M I E E Y P Y V V I L 320

TAA

ATT

FIGURE 9: Sequence of full mutant DerP1 including pre-protein containing a deletion at the propeptide cleavage site (NAET). Sequence includes coding (listed as SEQ ID NO. 7) and complementary DNA, and amino acid sequences (listed as SEQ ID NO. 2).

```
ATGAAAATTGTTTTGGCCATCGCCTCATTGTTGGCATTGAGCGCTGTTTATGCTCGTCCA 60
-----+-----+-----+-----+-----+-----+
TACTTTTAACAAAACCGGTAGCGGAGTAACAACCGTAACTCGCGACAAATACGAGCAGGT
M K I V L A I A S L L A L S A V Y A R P 20

TCATCGATCAAAACTTTTGAAGAATACAAAAAGCCTTCAACAAAAGTTATGCTACCTTC 120
-----+-----+-----+-----+-----+-----+
AGTAGCTAGTTTTTGAAACTTCTTATGTTTTTTCGGAAGTTGTTTTCAATACGATGGAAG
S S I K T F E E Y K K A F N K S Y A T F 40

GAAGATGAAGAAGCTGCCCCGTAAAAACTTTTTGGAATCAGTAAAATATGTTCAATCAAAT 180
-----+-----+-----+-----+-----+-----+
CTTCTACTTCTTCGACGGGCATTTTTGAAAACCTTAGTCATTTTATACAAGTTAGTTTA
E D E E A A R K N F L E S V K Y V Q S N 60

GGAGGTGCCATCAACCATTGTCCGATTTGTCGTTGGATGAATTCAAAAACCGATTTTTTG 240
-----+-----+-----+-----+-----+-----+
CCTCCACGGTAGTTGGTAAACAGGCTAAACAGCAACCTACTTAAGTTTTTGGCTAAAAAC
G G A I N H L S D L S L D E F K N R F L 80

ATGAGTGCAGAAGCTTTTGAACACCTCAAACTCAATTCGATTTG AAC 300
-----+-----+-----+-----+-----+-----+
TACTCACGTCTTCGAAAACCTGTGGAGTTTTGAGTTAAGCTAAAC TTG
M S A E A F E H L K T Q F D L N 100

GCCTGCAGTATCAATGGAAATGCTCCAGCTGAAATCGATTTGCGACAAATGCGAACTGTC 360
-----+-----+-----+-----+-----+-----+
CGGACGTCATAGTTACCTTTACGAGGTCGACTTTAGCTAAACGCTGTTTACGCTTGACAG
A C S I N G N A P A E I D L R Q M R T V 120

ACTCCCATTTCGTATGCAAGGAGGCTGTGGTTCATGTTGGGCTTTCTCTGGTGTGCGCGCA 420
-----+-----+-----+-----+-----+-----+
TGAGGGTAAGCATACGTTCCCTCCGACACCAAGTACAACCCGAAAAGAGACCACAACGCGCT
T P I R M Q G G C G S C W A F S G V A A 140

ACTGAATCAGCTTATTTGGCTTACCGTAATCAATCATTTGGATCTTGCTGAACAAGAATTA 480
-----+-----+-----+-----+-----+-----+
TGACTTAGTCGAATAAACCGAATGGCATTAGTTAGTAACCTAGAACGACTTGTTCTTAAT
T E S A Y L A Y R N Q S L D L A E Q E L 160
```

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GTCGATTGTGCTTCCCAACACGGTTGTCATGGTGATACCATTCACGTGGTATTGAATAC 540
-----+-----+-----+-----+-----+-----+-----+
CAGCTAACACGAAGGGTTGTGCCAACAGTACCCTATGGTAAGGTGCACCATAACTTATG
V D C A S Q H G C H G D T I P R G I E Y 180

ATCCAACATAATGGTGTCTGTCCTCAAGAAAGCTACTATCGATACGTTGCACGAGAACAAATCA 600
-----+-----+-----+-----+-----+-----+-----+
TAGGTTGTATTACCACAGCAGGTTCTTTTCGATGATAGCTATGCAACGTGCTCTTGTTAGT
I Q H N G V V Q E S Y Y R Y V A R E Q S 200

TGCCGACGACCAAATGCACAACGTTTCGGTATCTCAAACCTATTGCCAAATTTACCCACCA 660
-----+-----+-----+-----+-----+-----+-----+
ACGGCTGCTGGTTTACGTGTTGCAAAGCCATAGAGTTTGATAACGGTTTAAATGGGTGGT
C R R P N A Q R F G I S N Y C Q I Y P P 220

AATGTAAACAAAATTCGTGAAGCTTTGGCTCAAACCCACAGCGCTATTGCCGTCATTATT 720
-----+-----+-----+-----+-----+-----+-----+
TTACATTTGTTTTAAGCACTTCGAAACCGAGTTTGGGTGTCGCGATAACGGCAGTAATAA
N V N K I R E A L A Q T H S A I A V I I 240

GGCATCAAAGATTTAGACGCATTCCGTCATTATGATGGCCGAACAATCATTCAACGCGAT 780
-----+-----+-----+-----+-----+-----+-----+
CCGTAGTTTCTAAATCTGCGTAAGGCAGTAATACTACCGGCTTGTTAGTAAGTTGCGCTA
G I K D L D A F R H Y D G R T I I Q R D 260

AATGGTTACCAACCAAACCTATGCTGCTGTCAACATTGTTGGTTACAGTAACGCACAAGGT 840
-----+-----+-----+-----+-----+-----+-----+
TTACCAATGGTTGGTTTGTAGTGCGACAGTTGTAACAACCAATGTCATTGCGTGTTCCA
N G Y Q P N Y A A V N I V G Y S N A Q G 280

GTCGATTATTGGATCGTACGAAACAGTTGGGATACCAATTGGGGTGATAATGGTTACGGT 900
-----+-----+-----+-----+-----+-----+-----+
CAGCTAATAACCTAGCATGCTTTGTCAACCCTATGGTTAACCCCACTATTACCAATGCCA
V D Y W I V R N S W D T N W G D N G Y G 300

TATTTTGCTGCCAACATCGATTTGATGATGATTGAAGAATATCCATATGTTGTCATTCTC 960
-----+-----+-----+-----+-----+-----+-----+
ATAAAACGACGGTTGTAGCTAAACTACTACTAACTTCTTATAGGTATACAACAGTAAGAG
Y F A A N I D L M M I E E Y P Y V V I L 320

TAA

ATT

FIGURE 10: Sequence of full mutant DerP1 including pre-protein. Active site mutation His 268 → Ala 268, corresponding to His170→Ala170 of the mature protein). Sequence includes coding (listed as SEQ ID NO. 8) and complementary DNA, and amino acid sequences (listed as SEQ ID NO. 3).

```
ATGAAAATTGTTTTGGCCATCGCCTCATTGTTGGCATTGAGCGCTGTTTATGCTCGTCCA 60
-----+-----+-----+-----+-----+-----+-----+
TACTTTTAACAAAACCGGTAGCGGAGTAACAACCGTAACTCGCGACAAATACGAGCAGGT
M K I V L A I A S L L A L S A V Y A R P 20

TCATCGATCAAACTTTTGAAGAATACAAAAAGCCTTCAACAAAAGTTATGCTACCTTC 120
-----+-----+-----+-----+-----+-----+-----+
AGTAGCTAGTTTTGAAAACCTTCTTATGTTTTTCGGAAGTTGTTTTCAATACGATGGAAG
S S I K T F E E Y K K A F N K S Y A T F 40

GAAGATGAAGAAGCTGCCCCGTAAAACTTTTTGGAATCAGTAAATATGTTCAATCAAAT 180
-----+-----+-----+-----+-----+-----+-----+
CTTCTACTTCTTCGACGGGCATTTTTGAAAACCTTAGTCATTTTATACAAGTTAGTTTA
E D E E A A R K N F L E S V K Y V Q S N 60

GGAGGTGCCATCAACCATTTGTCCGATTTGTCTGTTGGATGAATTCAAAAACCGATTTTTG 240
-----+-----+-----+-----+-----+-----+-----+
CCTCCACGGTAGTTGGTAAACAGGCTAAACAGCAACCTACTTAAGTTTTGGCTAAAAAC
G G A I N H L S D L S L D E F K N R F L 80

ATGAGTGCAGAAGCTTTTGAACACCTCAAACTCAATTCGATTTGAATGCTGAAACTAAC 300
-----+-----+-----+-----+-----+-----+-----+
TACTCACGTCTTCGAAAACCTTGTGGAGTTTTGAGTTAAGCTAAACTTACGACTTTGATTG
M S A E A F E H L K T Q F D L N A E T N 100

GCCTGCAGTATCAATGGAAATGCTCCAGCTGAAATCGATTTGCGACAAATGCGAACTGTC 360
-----+-----+-----+-----+-----+-----+-----+
CGGACGTCATAGTTACCTTTACGAGGTCGACTTTAGCTAAACGCTGTTTACGCTTGACAG
A C S I N G N A P A E I D L R Q M R T V 120

ACTCCCATTTCGTATGCAAGGAGGCTGTGGTTCATGTTGGGCTTTCTCTGGTGTGCGGCA 420
-----+-----+-----+-----+-----+-----+-----+
TGAGGGTAAGCATACGTTCCCTCCGACACCAAGTACAACCCGAAAGAGACCACAACGGCGT
T P I R M Q G G C G S C W A F S G V A A 140

ACTGAATCAGCTTATTTGGCTTACCGTAATCAATCATTTGGATCTTGCTGAACAAGAATTA 480
-----+-----+-----+-----+-----+-----+-----+
TGACTTAGTTCGAATAAACCGAATGGCATTAGTTAGTAACCTAGAACGACTTGTTCTTAAT
T E S A Y L A Y R N Q S L D L A E Q E L 160
```


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-----+-----+-----+-----+-----+-----+-----+
CAGCTAACACGAAGGGTTGTGCCAACAGTACCACTATGGTAAGGTGCACCATAACTTATG
V D C A S Q H G C H G D T I P R G I E Y 180

ATCCAACATAATGGTGTGCTCCAAGAAAGCTACTATCGATACGTTGCACGAGAACAATCA 600
-----+-----+-----+-----+-----+-----+-----+
TAGGTTGTATTACCACAGCAGGTTCTTTTCGATGATAGCTATGCAACGTGCTCTTGTTAGT
I Q H N G V V Q E S Y Y R Y V A R E Q S 200

TGCCGACGACCAAATGCACAACGTTTTCGGTATCTCAAACCTATTGCCAAATTTACCCACCA 660
-----+-----+-----+-----+-----+-----+-----+
ACGGCTGCTGGTTTACGTGTTGCAAAGCCATAGAGTTTGATAACGGTTTAAATGGGTGGT
C R R P N A Q R F G I S N Y C Q I Y P P 220

AATGTAAACAAAATTCGTGAAGCTTTGGCTCAAACCCACAGCGCTATTGCCGTCATTATT 720
-----+-----+-----+-----+-----+-----+-----+
TTACATTTGTTTAAAGCACTTCGAAACCGAGTTTGGGTGTCGCGATAACGGCAGTAATAA
N V N K I R E A L A Q T H S A I A V I I 240

GGCATCAAAGATTTAGACGCATTCCGTCATTATGATGGCCGAACAATCATTCAACGCGAT 780
-----+-----+-----+-----+-----+-----+-----+
CCGTAGTTTCTAAATCTGCGTAAGGCAGTAATACTACCGGCTTGTTAGTAAGTTGCGCTA
G I K D L D A F R H Y D G R T I I Q R D 260

AATGGTTACCAACCAAACTAT**GCT**GCTGTCAACATTGTTGGTTACAGTAACGCACAAGGT 840
-----+-----+-----+-----+-----+-----+-----+
TTACCAATGGTTGGTTTGATA**CGA**CGACAGTTGTAACAACCAATGTCATTGCGTGTTCCA
N G Y Q P N Y A A V N I V G Y S N A Q G 280

GTTCGATTATTGGATCGTACGAAACAGTTGGGATACCAATTGGGGTGATAATGGTTACGGT 900
-----+-----+-----+-----+-----+-----+-----+
CAGCTAATAACCTAGCATGCTTTGTCAACCCTATGGTTAACCCCACTATTACCAATGCCA
V D Y W I V R N S W D T N W G D N G Y G 300

TATTTTGCTGCCAACATCGATTTGATGATGATTGAAGAATATCCATATGTTGTCATTCTC 960
-----+-----+-----+-----+-----+-----+-----+
ATAAAACGACGGTTGTAGCTAAACTACTACTAACTTCTTATAGGTATACAACAGTAAGAG
Y F A A N I D L M M I E E Y P Y V V I L 320

TAA

ATT

FIGURE 11: Amino acid sequence (SEQ ID NO: 4) for the mutant DerP1 as encoded by pNIV4842, and shown in figure 5.

1 MLLVNQSHQG FNKEHTSKMV SAIVLYVLLA AAAHSAFAAD PRPSSIKTFE
51 EYKKA FNKSY ATFEDEEAAR KNFLESVKYV QSNGGAINHL SDLSLDEFKN
101 RFLMSAEAFE HLKTQFDLNA CSINGNAPAE IDLRQMRTVT PIRMQGGCGS
151 CWA FSGVAAT ESAYLAYRNQ SLDLAEQELV DCASQHGCHG DTIPRGIEYI
201 QHNGVVQESY YRYVAREQSC RRPNAQRFGI SNYCQIYPPN ANKIREALAQ
251 THSAIAVIIG IKDLDAFRHY DGRTHIQRDN GYQPNYHAVN IVGYSNAQGV
301 DYWIVRNSWD TNWGDNGYGY FAANIDLMMI EEYPYVVIL*

FIGURE 12: Amino acid sequence (SEQ ID NO: 5) for the mutant DerP1 as encoded by pNIV4843, and shown in figure 6.

1 MLLVNQSHQG FNKEHTSKMV SAIVLYVLLA AAAHSAFAAD PRPSSIKTFE
51 EYKKAFNKSY ATFEDEEAAR KNFLESVKYV QSNNGGAINHL SDLSLDEFKN
101 RFLMSAEAFE HLKTQFDLNA ETNACSINGN APAEIDLRQM RTVTPIRMQG
151 GCGSAWAFSG VAATESAYLA YRNQSLDLAE QELVDCASQH GCHGDTIPRG
201 IEYIQHNGVV QESYYRYVAR EQSCRRPNAQ RFGISNYCQI YPPNANKIRE
251 ALAQTHSAIA VIIGIKDLDA FRHYDGRTII QRDNGYQPNY HAVNIVGYSN
301 AQGVVDYWIVR NSWDTNWGDN GYGYFAANID LMMIEEYPYV VIL*